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ABSTRACT

In October 1975 a questionnaire was sent to 200 members randomly selected from the "Directory of Faculty Members Teaching in the Field of Higher Education" to determine satisfaction with their teaching role. The research was designed to test Herzberg's theory, which states that "hygiene factors" (job context) are related to dissatisfaction while motivator factors (job content) contribute to satisfaction. The results demonstrate that different factors contribute to satisfaction and dissatisfaction. The hygiene factors of policies and practices, salary budgets, supervision and technical factors, and the time element were strong contributors to dissatisfaction. The motivators of achievement, recognition, and growth opportunities were highly associated with satisfying teaching experiences. The hygiene factor of interpersonal relations with students and the motivators of responsibility and advancement acted in the direction opposite to that predicted according to Herzberg's theory. Further analyses and caveats are discussed. (Author/MSE)

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JOB SATISFACTION OF FACULTY TEACHING HIGHER EDUCATION: AN EXAMINATION OF HERZBERG'S DUAL-FACTOR THEORY AND PORTER'S NEED SATISFACTION RESEARCH

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Abstract

In October, 1975 a questionnaire was sent to 200 members randomly selected from the "Directory of Faculty Members Teaching in the Field of Higher Education" to determine satisfaction with their teaching role. The research was designed to test Frederick Herzberg's theory which states that what he terms hygiene (job context) factors contribute to dissatisfaction while motivator (job content) factors relate to satisfaction. The questionnaire included two open-ended questions requesting the respondent to indicate factors of satisfaction and factors of dissatisfaction which were coded according to Herzberg derived categories and forced-choice questions which related to each factor. The forced-choice responses were also clustered according to Maslow's need hierarchy to determine the extent of need satisfaction in relation to such demographic variables as tenure, rank, and age.

Forty-two respondents (21.0%) returned their questionnaires checking "not currently teaching" and 73 (46.2%) responses formed the basis for the study. Chi square was used to determine the relationship of satisfaction and dissatisfaction to each factor and to determine the relationships of demographic data to need fulfillment.

The results obtained from the coded questions demonstrated that different factors contributed to satisfaction and dissatisfaction. The hygiene factors of "policies and practices", "salary/budget", "supervision-technical" and the "time element" were strong contributors to dissatisfaction. The motivators of "achievement", "recognition" and "growth opportunities" were highly associated with satisfying experiences. The hygiene factor of "interpersonal relations with students" and the motivators of "responsibility" and "advancement" acted unidimensionally but in the direction opposite to that predicted according to Herzberg's theory. When the respondents indicated their satisfaction or dissatisfaction on the forced-choice questions all factors with the exception of "policies and practices" ($p > .01$) were found to provide satisfaction at the .001 level of significance. For items related to security, esteem, and self-actualization needs, there was a relationship between satisfaction responses and tenure status, rank, and to a lesser degree, age. Items related to the social and autonomy needs had fewer relationships with the demographic variables.

Application of the results from this study should be done with extreme caution. The sample size, the fluctuating nature of satisfaction, and differences in coder perceptions limit the application of results to specific institutions.

Table of Contents

	Page
Introduction	1
Theoretical Background	2
Porter's Need Satisfaction Research	11
Statement of Hypotheses	12
Instruments and Factors	14
Sampling Characteristics	16
Analysis Procedure	18
Analysis of Results Obtained with a Modified Herzberg Critical Incidents Instrument (Instrument I)	19
Analysis of Results Obtained from Factor Rantings (Instrument II)	24
Results Regarding the Relationship of Demographic Data and Responses to Instrument II Items	29
Discussion and Implications	32
Summary	41
References	43
Appendix A: Industrial Studies Related to Herzberg's Theory	49
Appendix B: Faculty Studies Related to Herzberg's Theory	54
Appendix C: Sample Questionnaire	58

Introduction

There are numerous reasons for investigating satisfaction. Lawler and Porter (1967) support the study of job satisfaction to determine if the relationship between performance and satisfaction via rewards is maximized. The better performers should receive greater rewards and therefore be more satisfied than poorer performers. From the management perspective this is desirable because turnover would then occur among the less competent. Lawler and Porter also recognize the value of measuring higher order need satisfaction as evidence of how effective organizations have been in creating interesting and rewarding jobs, and therefore, indirect evidence of how motivating the jobs themselves are. With this view, the study of each faculty member's satisfactions could lead to developing the best role mix for a rewarding and satisfying job.

Seashore and Taber (1975) note the value in measuring satisfaction as a social indicator: to represent a valued product to society--- a component of the psychological GNP; to provide a monitoring and diagnostic aid for early warning of societal changes; and to provide a significant component in the theories and models to be used in the formation of social policy and programs. Illustrating one of their points, longitudinal studies of faculty satisfaction might be used to detect a move toward unionization.

With specific reference to education, Cohen (1974) supports the study of faculty satisfaction by stating:

> One could say that a college with an enthusiastic, personally satisfied staff is more likely to further student development than one with an apathetic group of time-savers going through the motions of information transmittal in their teaching and little more. (p. 369-370)

And, studies by Cooper (1973) and Stuntebeck (1974) have shown job satisfaction to be significantly correlated with student perceptions of teaching effectiveness.

Further, Argyris (1957, 1964) recognizes the importance of individual and organization fit. It is this author's belief that by knowing the factors which cause satisfaction and dissatisfaction in a particular organizational role, potential employees can better select careers which fit their needs and which would benefit the organization.

It was for the above reason of potential individual-organizational fit that the author initially became interested in studying the satisfaction and dissatisfaction of those who teach higher education. However, when surveying the satisfaction literature, Herzberg's (1959) dual-factor theory and Porter's (1962) findings regarding differential need satisfaction according to organizational rank sufficiently aroused curiousity regarding their application to faculty who teach higher education. Testing Herzberg's theory and Porter's findings thus became the overriding research focus.

Theoretical Background

In The Motivation to Work Frederick Herzberg (1959) explained a study which tested the hypothesis that job satisfaction and dissatis-

faction were caused by two different types of factors. This investigation of the job satisfaction of 200 engineers and accountants in the Pittsburgh area found that, in effect, different factors contributed to job satisfaction and dissatisfaction.

Herzberg used Flanagan's (1954) "critical incident" method for gathering data. With this method, subjects were asked, in a semi-structured interview, to think of a time when they felt exceptionally good or exceptionally bad about their present job or any other job they formally held.

Herzberg and his staff then analyzed the content of the interview statements, dividing these into "thought units" about a single event or condition that lead to a particular feeling (first level factors), a single characterization of a feeling (second level factors), or a description of a single effect (effects) of events on performance, turnover, and mental health.

The categories used for the first level factors and the criteria for the inclusion of statements into those categories were as follows:

1. Recognition. The major criterion for this category was some act of recognition to the individual. Some act of notice, praise, or blame was involved, and the source could be almost anyone: supervisor, some other individual in management as an impersonal force, a peer, a professional colleague, or the general public. This category included what Herzberg called "negative recognition" in the form of criticism or blame.

2. Achievement. This category involved some specifically mentioned success, and it included: successful completion of a job, solution to problems, vindication, and seeing the results of one's work. The definition of achievement also included the opposite: failure and the absence of achievement.

3. Possibility of Growth. Included here were instances in which the respondent reported changes in his situation involving objective evidence that possibilities for his growth are now increased or decreased.

4. Advancement. This category included actual changes in the status or position of the person in the company.

5. Salary. This category included all sequences of events in which compensation plays a role, such as wage or salary increases, or unfulfilled expectations of salary increases.

6. Interpersonal Relations. The coding of interpersonal relations was restricted to those stories in which there was some verbalization about the characteristics of interactions between the respondent and some other individual. This was set up in terms of three major categories: (a) Interpersonal Relations with Subordinates, (b) Interpersonal Relations with Superior, and (c) Interpersonal Relations with Peers.

7. Supervision-Technical. This factor differs from Interpersonal Relations with Superior in that included here would be the technical aspects of the supervisor's job, such as the competence or the incompetence of the supervisor, his willingness or unwillingness to delegate responsibility, or his willingness or unwillingness to teach.

8. Responsibility. Included here were statements in which the respondent reported satisfaction from being given responsibility for his own work or the work of others, or being given new responsibility. Also included were stories in which there was a loss of satisfaction from lack of responsibility.

9. Company Policy and Administration. Included here were sequences in which some overall aspect of the company was a factor. Sequences about good or poor communications, agreement or disagreement with company goals, adequacy or inadequacy of company management or organization, beneficial or harmful personnel policies are examples.

10. Working Conditions. Physical conditions of work, the amount of work, or the facilities available for doing the work were included in this factor.

11. Work Itself. This category was used when the respondent mentioned the actual doing of the job or the tasks of the as a source of good or bad feelings.

12. Personal Life. This category included those situations in which some aspect of the job affected the individual's personal life in such a way that the effect was a factor in the respondent's feelings about his job. Not accepted were sequences in which a factor in the personal life of an individual having nothing to do with his job was responsible for a period of good or bad feelings, even when these feelings affected the job.

13. Status. This category included sequences in which the respondent actually mentioned some sign or appurtenance of status as being a factor in his feelings about the job.

14. Job Security. Included here were objective signs of presence or absence of job security such as tenure or company stability or instability. (Herzberg, 1959, pp. 44-49)

The results of the content analysis of the interview are presented in Table 1. The data suggested to the professor that the factors of "achievement", "recognition", "work itself", "responsibility" and "advancement" operate only to produce job satisfaction while the factors "interpersonal relations" (with superior and peers), "supervision-technical", "company policy and administration", "working conditions", and "personal life" have the power to cause job dissatisfaction.

Table 1. PERCENTAGE OF EACH FIRST LEVEL FACTOR APPEARING IN SATISFYING (GOOD) AND DISSATISFYING (BAD) JOB STATEMENTS, HERZBERY STUDY (1959, p. 72)+

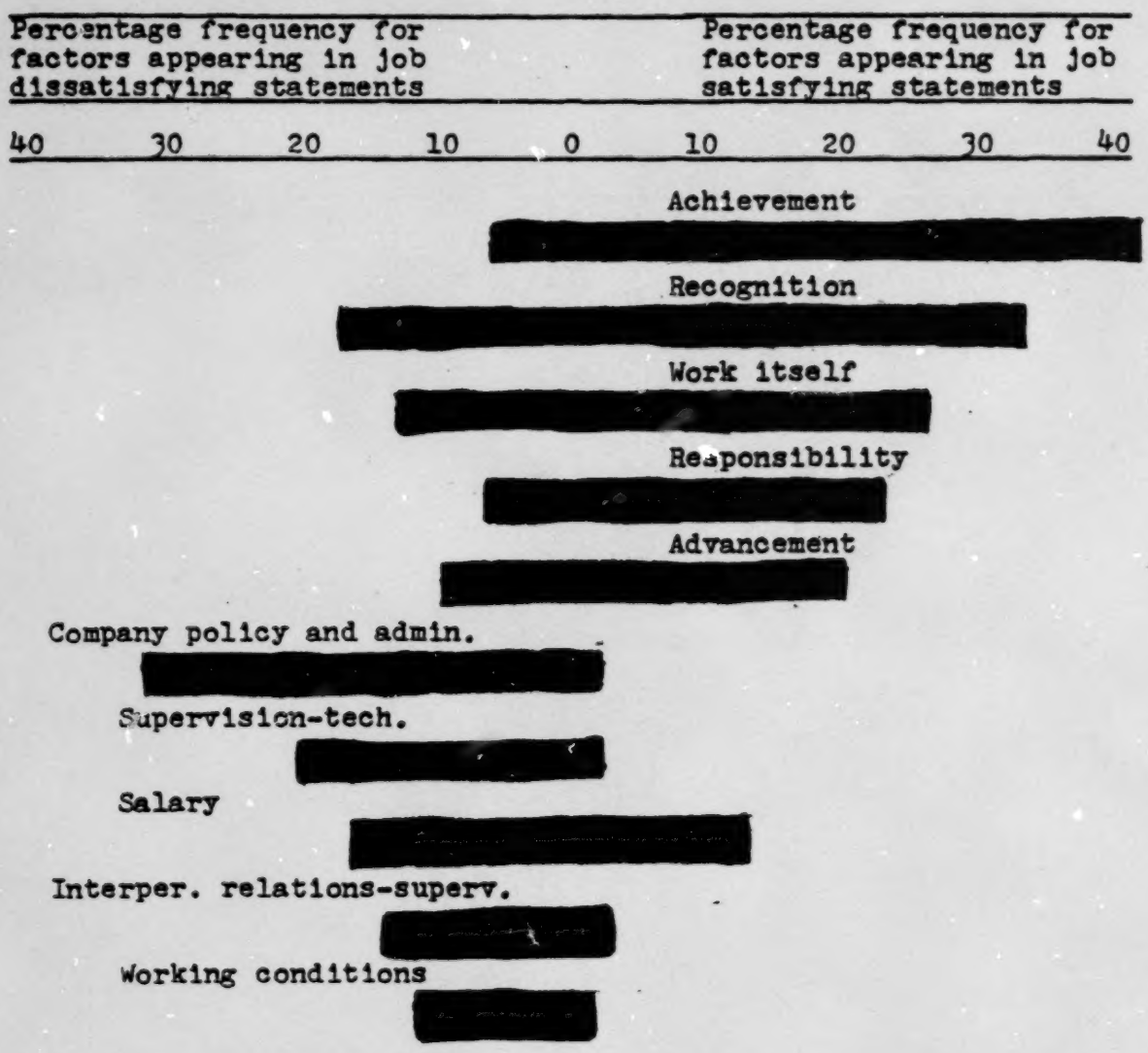
	Factor	Good	Bad
1.	Achievement	41*	7
2.	Recognition	33*	18
3.	Work Itself	26*	14
4.	Responsibility	23*	6
5.	Advancement	20*	11
6.	Salary	15	17
7.	Possibility of Growth	6	8
8.	Interpersonal Relations, Subord.	6	3
9.	Status	4	4
10.	Interp. Relations, Superior	4	15*
11.	Interp. Relations, Peers	3	8*
12.	Supervision-Technical	3	20*
13.	Company Policy and Administration	3	31*
14.	Working Conditions	1	11*
15.	Personal Life	1	6*
16.	Job Security	1	1

\+ The percentages total more than 100% since more than one factor can appear in any single sequence of events.

* Differences of totals between good and bad statistically significant at .01 level of confidence.

Herzberg contends that job satisfiers, motivators, are factors involved in doing the work or related to the job content while the job dissatisfiers, hygienes, are the factors that define the job content. Figure 1 displays the comparison of motivators and hygienes graphically.

Figure 1. COMPARISON OF MOTIVATORS AND HYGIENE FACTORS FOR ENGINEER AND ACCOUNTANT RESPONSES (Herzberg, 1959, p. 81).



Further, the Herzberg theory is opposed to the traditional bi-polar model which maintains that satisfaction and dissatisfaction are

opposite ends of the same continuum and that the removal of the element causing dissatisfaction will bring satisfaction and contrariwise for those factors causing satisfaction. Instead, Herzberg's dual-factor theory suggests that dissatisfaction and satisfaction, resulting from separate factor, exist on two different continua. The theoretical differences are illustrated below:

Figure 2. TRADITIONAL AND MOTIVATOR-HYGIENE SATISFACTION MODELS

Bi-polar theory

Satisfaction----------Dissatisfaction

Herzberg's dual-factor theory

Satisfaction----------Neither satisfaction nor dissatisfaction

Dissatisfaction----------Neither satisfaction nor dissatisfaction

In brief, Herzberg's theory purports that different factors are sources of satisfaction and dissatisfaction and that hygienes contribute to dissatisfaction and not satisfaction while motivators contribute to satisfaction and not dissatisfaction.

Myriad industrial investigations have been conducted to test the dual-factor theory. Appendix A displays some results as compiled and summarized by Burke (1966) and House and Widgor (1967). Satisfaction studies using faculty as subjects are comparatively few. They are cited in Table 2. Of these, eight explore some aspect of the Herzberg dual-factor theory. A comparison of the Herzberg-related faculty studies would be impractical because of sample, instrument, and analysis variations. They are, however, summarized in Appendix B.

Table 2. FACULTY JOB SATISFACTION STUDIES

Liberal Arts Colleges	Universities	Junior and Community Colleges	Mixed institutions
Bachman (1968)	Russell (1962)	Medsker (1960)	Eckert, Stecklein & Sagan (1959) also see Eckert & Stecklein (1959
Kratcoski (1969)	Field (1965) (letters and science faculty)	Mills (1968) also see Kurth & Mills (1968)	Allen (1961)
Hardin (1970)	*Swierenga (1970)	Richardson & Blocker (1968)	Bowers (1968)
Manning (1973) (science faculty)	Borck (1972) (social science faculty)	Barrett (1969)	*Avakian (1971)
*Morgan (1974) (physical ed. & athletic faculty & staff)	Cope (1972)	*Edmundson (1969)	Javier (1971)
	Wyrick (1972)	Sanders (1971)	*Leon (1973)
	Hodges (1973) (engineering faculty)	*Cohen (1973)	*Jamann (1974) (nursing faculty)
	Sprague (1974)	Cooper (1973)	
	Stuntebeck (1974)	Frankel (1973)	
		Poosawtsee (1973)	
		*Wozniak (1973) (music faculty)	
		Tesar (1974)	
Kelly (1949) did not specify institutional type		Williams (1974)	

* Examined the Herzberg dual-factor theory.

A perusal of the results of Appendixes A and B indicates conflicting findings. Whitsett and Winslow (1967) claim the unsupportive results are due to theoretical misinterpretations, weak methods, and misinterpretation of results. Yet, a number of authors (Dunnette, Campbell, & Hackel, 1967; Ewen, 1964; Hulin & Smith, 1967; Lindsey, Marks, & Gorlow, 1967; Porter, Lawler, & Hackman, 1975; and Soliman, 1970) have noted that the Herzberg theory may be method-bound---those

studies replicating Herzberg's methods confirm his findings while those using alternative instruments or procedures to test the theory are not supportive. Indeed, this general tendency is recognized in the appendix result summaries. In defense, Grigaliunas and Herzberg (1971) compared a questionnaire method with the original interview procedure. They concluded that when employing a rating scheme subjects rate items actually irrelevant to their experiences, that subjects have a difficult time focusing back to the incident and determining what is important as opposed to what is important to them generally. The tendency for the respondent to rate with a halo effect and the problems of the subjects' misinterpretation of items were also posed by Grigaliunas and Herzberg as dilemmas when using rating methods.

The above is not the sole criticism of Herzberg's research. Before commencing the explanation of Porter's need satisfaction research other criticisms of Herzberg's methodology demand attention.

Evans (1970) sees potential overlap and diffuseness of factor categories as a problem. "Recognition" is associated with good or satisfying sequences but "interpersonal relations with superiors and peers" are associated with bad sequences. Evans asks: "Where does recognition come from but through relations with peers and superiors?" Further, "responsibility" and "advancement" (motivators) may come from "company policy and administration" (hygiene). He also notes that pay appears with equal frequency yet is labelled by Herzberg as a hygiene factor. In response to the last criticism Herzberg (1959) states that salary is classified as a hygiene because in dissatisfying long duration experiences pay is related three times as much as in short duration events and it is found with equal frequency in long and short satisfying events (p. 82-83)

Brayfield (1960) discounts the Herzberg results on the basis of using content analysis of interview data in contrast with more direct methods of determining satisfaction. Similarly, Graen (1966) registers the criticism that the coding is not completely determined by the rating system and the data but requires the interpretation of the rater. He related that the dimensions in the situation may reflect more the rater's hypothesis concerning the compositions and interrelations of dimensions than the respondent's own perceptions.

Vroom (1964) sees another methodological concern:

> It is...possible that obtained differences between stated sources of satisfaction and dissatisfaction stem from defensive processes within the individual respondent. Persons may be more likely to attribute the causes of satisfaction to their own achievements and accomplishments on the job. On the other hand, they may be more likely to attribute their dissatisfaction not to personal inadequacies or deficiencies but to factors in the work environment; i.e., obstacles presented by company policies or supervision. (p. 129)

Research by Hall (1973) and Wernimont (1966) has in fact supported Vroom's claim that Herzberg's results are in part a product of ego defense processes.

Another problem was raised by Hinrichs and Mischkind (1967). In Herzberg's study and many of the supportive investigations the subjects were asked to think when they felt exceptionally good or bad about their job <u>whether it be their present job or any other job they may have had</u>. As a result these authors argue that there is no control over the sampling frame for the data and no clear cut basis for drawing inferences about the contribution of various job factors to overall satisfaction. To this criticism Herzberg would probably initially state that the dual-factor theory purposely does not make statements about global satisfaction because satisfaction

and dissatisfaction are not seen as opposites on the same continuum. Hinrichs and Mischkind also assert that a theory is as powerful as its ability to accommodate deviant cases and there is nothing in Herzberg's notion to explain cases which do not conform to the two-factor dichotomy. Perhaps Grigaliunas and Herzberg's (1971) later recognition of flaws in alternative methods should be considered the first step in accounting for deviant cases.

And finally, to the list of criticisms Lindsay, Marks, and Garlow (1967) add that the number of job factors within a given incident are not controlled.

It is not the mission of this investigator to attempt to eliminate the above potential methodological flaws but rather to examine some of these conjectures when discussing the outcomes of the present study.

Porter's Need Satisfaction Research

In the early 1960's Lyman W. Porter (1961, 1962, 1963) developed and utilized a scale purported to measure the magnitude, importance and degree of need satisfaction of managers in relation to Maslow's (1954) hierarchy of needs. Five need categories were chosen for study: security, social, esteem, autonomy, and self-actualization. Each of the thirteen items on the scale attempted to measure not only the existing degree of need fulfillment but also the discrepancy between achieved and expected levels in addition to the relative importance of the category.

In one Porter study (1962) a random sample of 1,916 American Management Association members completed the need fulfillment questionnaire. The respondents were classified as presidents, vice

presidents, upper middle, lower middle and lower managers. It was found that need fulfillment deficiencies progressively increased from the top to the bottom of the management hierarchy for three of the five need categories---esteem, autonomy and self-actualization. There were no significant trends within items or categories of security and social needs. Age differences among levels were unable to explain the differences which occurred among the levels.

It is one goal of this researcher to determine if similar results are found for faculty need fulfillment when using direct satisfaction questioning rather than Porter's discrepancy method.

Statement of Hypotheses

Hypothesis I:

When using a modified form of the Herzberg critical incidents method, different factors will contribute to satisfaction and dissatisfaction. Motivators, as defined by Herzberg, are expected to contribute to feelings of job satisfaction and their absence will not necessarily contribute to feelings of job dissatisfaction. In addition, hygienes, as defined by Herzberg, are expected to contribute to feelings of dissatisfaction when absent and are not expected to contribute to satisfaction when present. A difference between a satisfaction and dissatisfaction score for a particular factor would indicate that for that factor, satisfaction and dissatisfaction are not opposites. It follows that if the frequency of dissatisfaction scores is significantly greater than the frequency of satisfaction scores, then that factor (or its absence) serves as a greater source of dissatisfaction. Conversely, if the satisfaction frequency score

is greater than the dissatisfaction frequency score, that factor serves as a greater source of satisfaction.

This hypothesis is in contrast to the bi-polar model of job satisfaction and dissatisfaction which would expect to find no significant difference between the frequency of satisfaction and dissatisfaction scores for any given factor because any given factor which serves as a strong satisfier would also serve equally strong as a dissatisfier if missing.

The above dual-factor based hypothesis was also tested using a rating scale derived a priori from Herzberg's categories.

Hypothesis II:

When employing the modified critical incidents method and when using the rating system, motivator factors as a group will contribute more to a feeling of job satisfaction than do the presence of hygiene factors as a group. Also according to the dual-factor theory, hygiene factors collectively will contribute with greater frequency when an individual is dissatisfied than will total motivator factors. This hypothesis contrasts the bi-polar model where the faculty respondent would be expected to indicate as many motivator factors when relating satisfying situations as dissatisfying situations, and likewise for hygiene factors.

Hypothesis III:

There will be a significant relationship between satisfaction-dissatisfaction responses and tenure status (tenure and no tenure) and rank (professor, associate, and assistant) when examining the rating format results. This is expected to be true for factors related to esteem needs ("recognition" and "status"), autonomy needs

("autonomy"), and self-actualization needs ("sense of accomplishment", "achievement", and "opportunities for growth"). For the lower order needs of security (job security") and social ("opportunity to help others", and "interpersonal relations with students, colleagues, subordinates and supervisors") the satisfying and dissatisfying responses are not expected to differentiate according to rank and tenure of the respondents. Although age is logically expected to correlate with rank and tenure in the teaching profession, in keeping with the findings of Porter in the industrial setting, age is predicted not to relate to dissatisfied and satisfied responses. Tenure was added as a variable in this study and is expected to follow the dissatisfaction-satisfaction need response pattern of rank.

Instruments and Factors

Two instruments were combined into one questionnaire. The first instrument, questions one and two, was designed to replicate the Herzberg methodology in order to determine if the two-factor theory of job satisfaction was applicable to faculty teaching higher education. This was done with several modifications:

1. The respondents were asked to write their responses to the questions: "When you feel exceptionally good/bad about your job, what aspects come to mind?" In Herzberg's original study the questions were asked orally in a semi-structured interview. The written format has, however, successfully replicated the original findings when conducted by Herzberg (1963), Leon (1973) and Schwartz, Jenusiatis, and Stark (1973).

2. In response to the methodological criticism waged by Hinrichs and Mischkind (1967), a second modification was to restrict the re-

sponses to one's current teaching position.

3. A limited space was provided for the question response. This forced the respondents to be concise and simplified the later coding procedure.

4. Emphasis was placed upon the first level factors when coding in order to focus on the objective experiences rather than the subjective second order factors or effects. In confirmation of this practice, Herzberg (1966) wrote in Work and the Nature of Man that the more objective first level analysis of events takes precedence over the more subjective second level of analysis.

5. After an initial examination of the responses, due to the frequency of their mention, two factors were added to Herzberg's initial 16 factors: Time Element: Included in this category were such statements as not having enough time to prepare class presentations, too much time spent in committee meetings, and not sufficient time to publish or research. Likewise, having sufficient time to do one's work, would be in this category. Interpersonal Relations with Students: Statements about receiving feedback from students, seeing them develop, and working with high and low calibre students, etc. were placed within this category. And, responses pertaining to departmental finances were placed in the "salary" category.

The second instrument began with question three and continued through question 19. (See questionnaire in Appendix C.) Respondents were asked to check one of the following with respect to each factor: very satisfied, quite satisfied, somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied, quite dissatisfied, or very dissatisfied. The option of "neither satisfied nor dissatisfied" was

added because of the dual-factor premise that motivator factors when present would act to increase satisfaction but their absence would not necessarily cause dissatisfaction but instead neither satisfaction nor dissatisfaction. And, when hygiene factors are present rather than respondents checking a satisfaction rating, the dual-factor theory would predict the checking of neither satisfied nor dissatisfied.

Questions 20, 21, and 22 ("opportunity to help others", "amount of autonomy", and "sense of accomplishment") were added to more thoroughly examine the relationships of demographic data to need satisfaction-dissatisfaction responses. And, questions 23, 24, 25, and 26 provided measures of global job satisfaction from different perspectives. (Little reference will be made to these satisfaction ratings since, as related earlier, the dual-factor theory intentionally does not consider it.) The concluding portion of the questionnaire was used to gather demographic information.

Sample Characteristics

By an initial flip of a coin 200 individuals were alternately selected from the alphabetical "November 1974 Directory of Faculty Members Teaching in the Field of Higher Education" to receive a questionnaire. No effort was made to refine the sampling pool although in several cases the title (Director of Research, doctoral student, etc.) indicated that they probably were not teaching.

Out of the 200 questionnaires mailed, eight (4.0%) were returned "unknown" by the postal service and 42 (21.0%) returned their questionnaires checking "not teaching higher education". This reduced the

potential sample group to 150 persons. A total of six questionnaires were returned but not used in the data. These questionnaires were not completed due to the respondents' lack of time, were believed to contain false information, or arrived after results were tabulated. Seventy-three (48.7%) of the questionnaires returned were usable.

Of the 73 usable questionnaires, 39 (53.4%) of the faculty held the academic rank of professor, 17 (23.3%) were associate professors, 15 (20.5%) were assistant professors, one was a lecturer and another an executive officer (2.7%). Fifty (68.5%) were tenured and 22 (30.1%) were not. One respondent did not respond to this question. There were 44 (60.3%) respondents with a full-time teaching appointment, 28 (38.4%) with part-time appointments, and one who did not have an official appointment.

Sixty-six (90.4%) of the faculty participating in the study were males while seven (9.6%) were females. Sixty-one (83.6%) of the respondents were married, eight (11.0%) were single, three (4.1%) divorced, and one failed to respond appropriately.

The highest degree earned by 49 (67.1%) was a Ph.D., 19 (26.0%) had an Ed.D., one had received an L.L.D. (1.4%) and four (5.5%) had Master's degrees as the highest degree held.

The ages of the respondents ranged from 32 to 72 years old with the mean of 47 years. The years of total teaching experience varied from one year of experience to 45 years. The mean was 15 years. The amount of experience teaching in one's current department went from one to 18 years of experience. The mean was six years of experience in one's current department. Further, it was learned that five (6.8%) were represented in collective bargaining and 67 (91.8%) were

not. One member did not respond to this question.

The number of faculty teaching higher education at the represented institutions ranged from one to 23. (The researcher wonders if the figure of 23 teaching higher education was accurate. Twelve faculty members teaching higher education was the next highest figure cited.) The mean number teaching higher education was six. The total number of faculty in the department where higher education was located ranged from two to 90 faculty members with a mean of 16.

Analysis Procedure

The procedures used to analyze the data were similar to that used by Herzberg, with the basic difference mentioned earlier of combining a priori and a posteriori categories for analyzing statements received for Instrument I and the complete use of a priori categories for the rated instrument.

Frequency distributions were made for each factor in Instrument I according to it being mentioned in good and bad situations. (Following the Herzberg method, total factor frequencies coded were greater than the number of experiences related since in some instances more than one factor could be extracted from an experience.) For Instrument II frequency data was gathered by factor in relation to the number of times it was marked as causing satisfaction or dissatisfaction. The percent to which each factor, and hygienes and motivators as a group, contributed to total satisfaction and dissatisfaction was calculated for both instruments. The percent of each item being noted as a dissatisfier and satisfier was also tabulated. And, for Instrument II the mean factor responses were determined by weighting the

responses (very satisfied=7, quite satisfied=6, etc.).

To test Hypothesis I the data were subjected to chi square analysis to determine if the satisfaction-dissatisfaction scores were related to particular factors. Hypothesis II was tested by applying chi square analysis to determine if motivators contributed more to a feeling of job satisfaction than did the presence of hygiene factors. The same statistical tool was used to discover the relationships of hygienes and motivators to dissatisfying experiences.

To test Hypothesis III chi square was again employed to check for relationships between factor satisfaction-dissatisfaction responses and the variables of rank, tenure status, and age. For these chi square tests the frequencies were aggregated in two ways. One approach was to tally the frequencies for "very satisfied" responses and frequencies for all other responses on the scale and then apply the chi square test for relations of responses to the demographic variables. The other approach was to test the frequency of "satisfied" and "dissatisfied" factor responses in relation to each of the three variables. The rating of "neither satisfied nor dissatisfied" was not used in the frequency tally for the second method as it was in the former. All chi square tests for Hypothesis III were based upon data from Instrument II. Comparisons using such variables as sex, marital status and collective bargaining representation were not feasible due to disproportionate sample sizes.

Analysis of Results Obtained with a Modified Herzberg Critical Incidents Instrument (Instrument I)

Table 3 presents the percentages and values of chi square for

the frequency with which first level factors appeared in job satisfying and dissatisfying experiences for higher education faculty. Figure 3 displays the data in graph form.

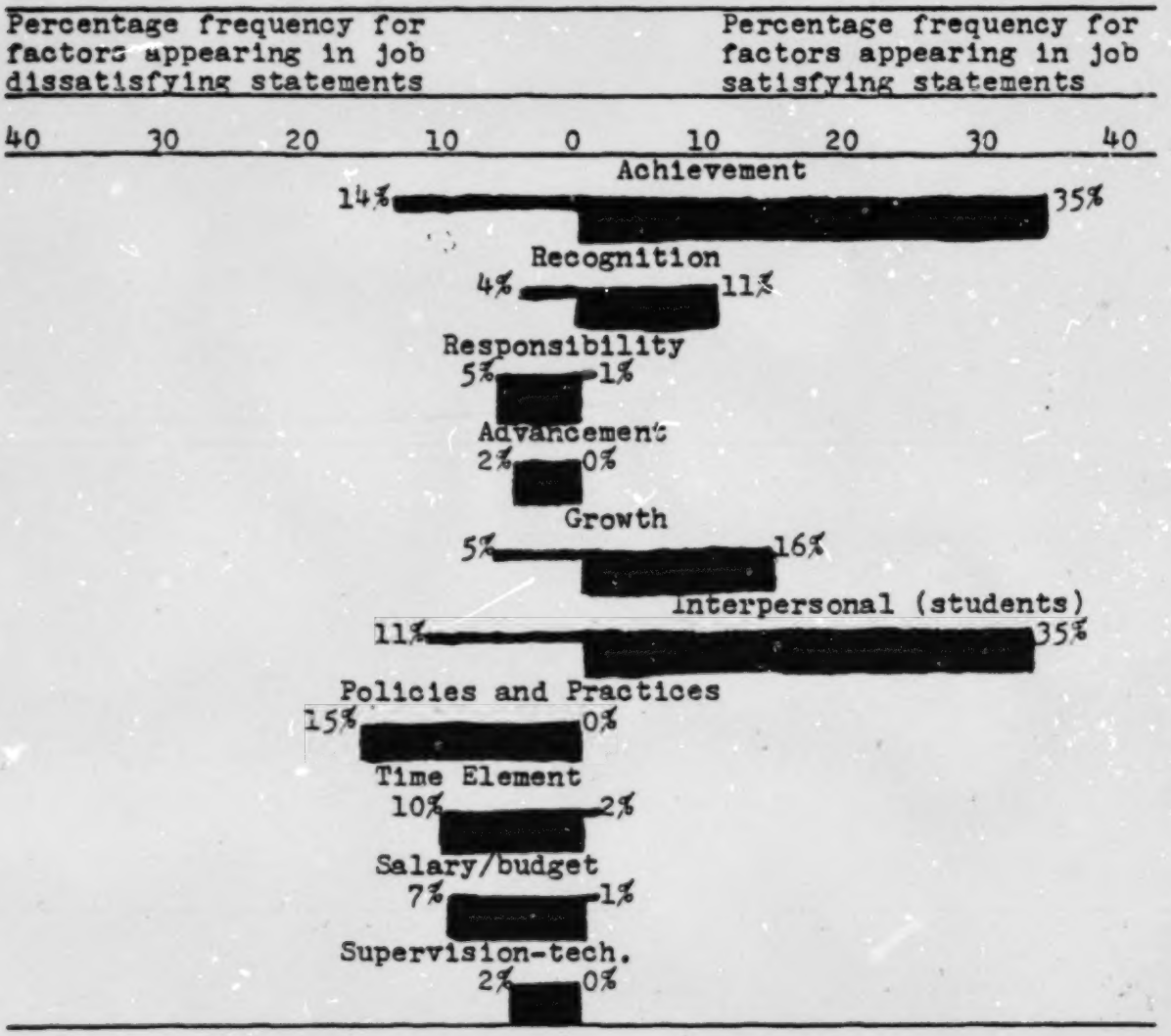
Table 3. PERCENTAGES AND VALUES OF CHI SQUARE FOR THE FREQUENCY WITH WHICH EACH FIRST LEVEL FACTOR APPEARED IN GOOD AND BAD EXPERIENCES FOR INSTRUMENT I+

Factor	Good		Bad		Chi Square	p
1. Achievement	(77.44)	35.23*	(25.56)	13.69	21.52	.001
2. Recognition	(75.00)	11.05*	(25.00)	4.17	24.50	.001
3. Work Itself	(57.45)	28.42	(42.55)	23.81	2.08	NS
4. Responsibility	(10.00)	.53	(90.00)	5.36*	6.40	.05
5. Advancement	(00.00)	.00	(100.00)	2.38*	4.00	.05
6. Growth	(78.95)	15.79*	(21.05)	4.76	12.74	.001
7. Salary/budget	(15.38)	1.05	(84.62)	6.55*	6.24	.05
8. Interpersonal (students)	(77.91)	35.26*	(22.09)	11.31	26.80	.001
9. Interpersonal (superior)	(28.57)	1.05	(71.43)	2.98	3.58	NS
10. Interpersonal (colleagues)	(40.74)	5.79	(59.62)	9.52	.93	NS
11. Interpersonal (subordinates)	(00.00)	0.00	(00.00)	0.00	.00	NS
12. Supervision-technical	(00.00)	0.00	(100.00)	2.38*	4.00	.05
13. Policies and Practices	(00.00)	0.00	(100.00)	15.48*	26.00	.001
14. Work condition	(20.00)	.53	(80.00)	2.38	1.80	NS
15. Job Security	(00.00)	.00	(100.00)	1.19	2.00	NS
16. Status	(00.00)	.00	(100.00)	1.79	3.00	NS
17. Personal Life	(00.00)	.00	(00.00)	.00	.00	NS
18. Time Element	(14.29)	1.58	(85.71)	10.71*	10.72	.01

+ In parentheses are the percentages of that factor being noted in satisfying and dissatisfying experiences. The other percentages are the percent to which that factor contributed to the total frequency of dissatisfying and satisfying extracted factors. This percent totals more than 100% because more than one factor can appear in any single experience.

* Differences between satisfying and dissatisfying frequencies are statistically significant. Chi square value required for significance at the .05 level is 3.84; at the .01 level, 6.64; and at the .001, 10.83.

Figure 3. A GRAPHIC REPRESENTATION OF SIGNIFICANT SATISFIERS AND DISSATISFIERS (INSTRUMENT I)*



* The width of the bar indicates the extent that factor was noted as being a satisfier or dissatisfier.

Three motivators ("achievement", "recognition", and "growth opportunities") were significant sources of job satisfaction. The motivator "work itself" was operating in the predicted direction yet was not statistically significant. The motivator "advancement" acted as a hygiene factor but was not statistically significant. And, "responsibility", a motivator, behaved as a hygiene to a significant

degree.

Table 3 also indicates that the hygiene factors, "salary/ budget", the "time element", "supervision-technical", and "policies and practices" were significant in the direction predicted. The hygiene "interpersonal relations with students" acted as a motivator at the .001 level and five hygiene factors ("interpersonal relations with colleagues and supervisor", "work conditions", "job security", and "status") behaved in the expected manner according to the dual-factor theory but were not significant. No experiences were related which involved the categories of "personal life" as affected by the job or "interpersonal relations-subordinates".

In summary, Hypothesis I was generally supported with Instrument I. The results upheld the dual-factor theory with the exceptions of "advancement", "responsibility", and "interpersonal relations with students" which predominately acted unidimentionally but in the direction opposite to that predicted.

Concerning Hypothesis II, table 4 shows the motivators and hygienes grouped as sources of satisfaction and dissatisfaction as derived from the faculty responses to Instrument I. The data indicate that motivators as a group were significant sources of satisfaction (good experiences) and were less a source of dissatisfaction (bad experiences). Conversely, hygiene factors were an important source of dissatisfaction and a lesser source for satisfaction. The chi square (20.92) was significant beyond the .001 level.

Figure 4 represents the same data in a different manner. Of the satisfying experiences motivators contributed 67% and hygienes accounted for 33%. When considering the dissatisfying experiences,

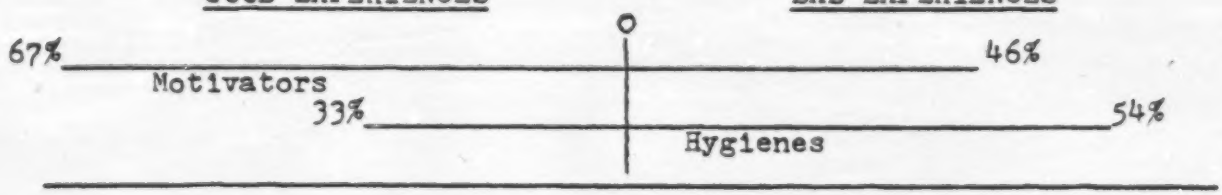
46% of the responses were motivator factors and 54% were hygiene factors.

Table 4. MOTIVATOR AND HYGIENE FACTORS IN GOOD AND BAD EXPERIENCES FROM THE CONTENT ANALYSIS OF INSTRUMENT I.

ATTITUDES / FACTOR	GOOD	BAD	TOTALS
MOTIVATORS	173/149*	91/115*	246
HYGIENES	86/110*	108/84*	194
TOTALS	259	199	458
df=1 X^2=20.92	p .001	c=.209	

* Expected values.

Figure 4. PERCENTAGES OF MOTIVATOR AND HYGIENE FACTORS IN GOOD AND BAD EXPERIENCES



In sum, Hypothesis II was supported with the results of Instrument I. Motivators were not equally distributed according to dissatisfaction and satisfaction; they were prominate sources of satisfaction. Hygiene factors were related more to dissatisfying experiences than satisfying experiences when examined collectively. Motivators did, however, show a stronger relationship to satisfying experiences than

was shown for hygienes and dissatisfying experiences.

Analysis of the Results Obtained from Factor Ratings (Instrument II)

Table 5 shows the percentages and values of chi square for the faculty ratings of Herzberg's 16 factors and the additional factor of "interpersonal relations with students".

The chi square tabulations vividly demonstrate that all factors acted as motivators and contributed to satisfaction more than dissatisfaction. Faculty members were highly satisfied with every factor. This level of satisfaction is also reflected in the global satisfaction scores. (See Appendix C for percentage scores noted on the sample questionnaire.)

It is also noted when examing the percentages in table 5 and the rank ordering of factor means in table 6 that motivator factors provide more satisfaction than do hygiene factors. The motivator of "advancement" and the hygienes of "interpersonal relations with students and subordinates" and "job security" were the exceptions. The factors related to students, subordinates, and security were very highly satisfying and found ranked among the motivators. And "advancement", although satisfying, was not found among the top factors but rather in the hygiene cluster.

Hypothesis I for the rating method was only partially upheld. The motivators did behave in the satisfaction direction to a significant degree; but hygiene factors were not found to have dissatisfaction scores significantly higher than satisfaction scores. Hygiene factors, in fact, operated at a significant level in the direction

opposite to that predicted. No factor was found to have a greater dissatisfaction score than satisfaction score. In short, the two-factor theory was violated with reference to hygiene behavior when the rating method was used.

Table 5. PERCENTAGES AND VALUES OF CHI SQUARE FOR THE FREQUENCY WITH WHICH EACH FACTOR CATEGORY OF INSTRUMENT II WAS RATED AS SATISFYING OR DISSATISFYING+

Factor		Satisfying		Dissatisfying		Chi Square	p
1.	Achievement	(95.77)	6.62*	(4.23)	2.33	59.50	.001
2.	Recognition	(94.03)	6.13*	(5.97)	3.10	51.96	.001
3.	Work Itself	(100.00)	7.01*	(0.00)	0.00	72.00	.001
4.	Responsibility	(97.14)	6.62*	(2.86)	1.55	62.22	.001
5.	Advancement	(76.19)	4.67*	(23.81)	11.63	17.28	.001
6.	Growth	(90.28)	6.33*	(9.72)	5.43	42.72	.001
7.	Salary	(90.14)	6.23*	(9.86)	5.43	45.76	.001
8.	Interpersonal (student)	(100.00)	6.82*	(0.00)	0.00	72.00	.001
9.	Interpersonal (superior)	(75.76)	4.87*	(24.24)	12.40	17.52	.001
10.	Interpersonal (colleagues)	(84.06)	5.65*	(15.94)	8.53	32.02	.001
11.	Interpersonal (subordinate)	(100.00)	6.72*	(0.00)	0.00	69.00	.001
12.	Supervisor-technical	(83.08)	5.26*	(16.92)	8.53	28.44	.001
13.	Policies and Practices	(68.25)	4.19*	(31.75)	15.50	8.40	.01
14.	Work conditions	(88.24)	5.84*	(11.76)	6.20	39.76	.001
15.	Job Security	(89.86)	6.04*	(10.14)	5.43	43.84	.001
16.	Status	(88.06)	5.74*	(11.94)	6.20	30.22	.001
17.	Personal Life	(84.38)	5.26*	(15.63)	7.75	30.26	.001

+ In parenthesis are the percentages of that factor being noted as a satisfying and dissatisfying experience. The other percentages are the percent to which that factor contributed to the total frequency of dissatisfied and satisfied ratings.

* Differences between satisfying and dissatisfying frequencies are statisfically significant. Chi square value required for signifcance at the .01 level is 6.64 and at the .001 level, 10.83.

Table 6. MOTIVATORS AND HYGIENES LISTED ACCORDING TO THE MEAN OF WEIGHTED SCORES*

Factor Type	Factor	Mean Score
Motivator	Work Itself	6.40
Hygiene	Interpersonal (students)	6.39
Hygiene	Interpersonal (subordinates)	6.14
Motivator	Responsibility	6.08
Motivator	Achievement	6.03
Hygiene	Job Security	5.90
Motivator	Growth Opportunities	5.78
Motivator	Recognition	5.70
Hygiene	Interpersonal (colleagues)	5.64
Hygiene	Salary	5.62
Hygiene	Status	5.60
Hygiene	Personal Life	5.55
Hygiene	Supervision-technical	5.46
Hygiene	Work Conditions	5.45
Hygiene	Interpersonal (supervisor)	5.42
Motivator	Advancement	5.13
Hygiene	Policies and Practices	4.14

* To calculate the factor mean scores the following weights were used: very satisfied=7, quite satisfied=6, somewhat satisfied=5, neither satisfied nor dissatisfied=4, somewhat dissatisfied=3, quite dissatisfied=2, and very dissatisfied=1.

It is important to notice that the rank of "neither satisfied nor dissatisfied" was not strongly used for the presence of hygiene factors as the Herzberg theory would contend. Instead their presence was noted to be satisfying. Table 7 shows the frequency of "neither satisfied nor dissatisfied" scores, and the frequency of satisfied and dissatisfied ratings. It appears that the "neither satisfied nor dissatisfied" rank was used when the factor was not understood, as noted by the comments written on the questionnaire, or used when the factor did not apply as in the case of a professor's opportunity for advancement.

Table 7. FREQUENCIES FOR SATISFIED, NEITHER SATISFIED NOR DISSATISFIED, AND DISSATISFIED RATINGS.

Factor	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied
Achievement	68	1	3
Recognition	63	5	4
Work Itself	72	1	0
Responsibility	68	3	2
Advancement	48	6	15
Growth Opportunities	65	1	7
Salary	64	2	7
Interpersonal (students)	70	0	0
Interpersonal (superior)	50	3	16
Interpersonal (peers)	58	4	11
Interpersonal (subord.)	69	2	0
Supervisor-technical	54	4	11
Policies and practices	43	7	20
Work Conditions	60	5	8
Job Security	62	3	7
Status	59	6	8
Personal Life	54	7	10

Concerning Hypothesis II, table 8 depicts motivator and hygiene factors and their relationship as a group to job satisfaction and dissatisfaction. Recognizing that a higher percentage of responses were satisfying and that more hygiene factors were rated than motivators the results do tend to support the Herzberg theory. The hygiene factors were more likely to result in dissatisfaction than would be expected at chance. And, motivator factors were more likely to contribute to satisfaction than chance would predict. The chi square is 8.89 and significant at the .01 level of confidence. To test the strength of the relationship a contingency coefficient was utilized. It was found to be .088. By comparing this contingency coefficient with that based upon the chi square for Instrument I (c=.209, a much stronger relationship is found between hygienes and motivators with dissatisfaction and satisfaction responses when using the modified

critical incidents instrument.

Table 7. MOTIVATOR AND HYGIENE FACTORS RATED AS SATISFYING AND DISSATISFYING (INSTRUMENT II)

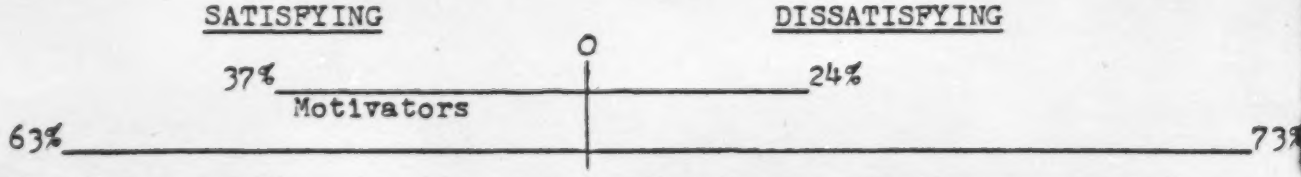
FACTORS \ ATTITUDES	SATISFYING	DISSATISFYING	TOTALS
MOTIVATORS	384/368.69*	31/46.31*	415
HYGIENES	643/658.31*	98/82.69*	741
TOTALS	1027	129	1156

df=1 X^2=8.89 p .01 c=.088

* Expected values.

Figure 5 presents the same data in a different form. Of the job satisfying responses, 37% consisted of motivator factors and 63% were hygiene responses. The dissatisfying responses consisted of 76% hygiene responses and 24% were motivator-related. Again, comparing figure 5 with similar data from Instrument I (Fig. 4, p. 23), it is seen that Instrument I more clearly supports the Herzberg theory that motivators contribute more to satisfaction than expected by chance and hygienes contribute less than expected and the reverse for dissatisfaction contributions.

Figure 5. PERCENTAGES OF MOTIVATOR AND HYGIENE FACTORS RATED SATISFYING AND DISSATISFYING (INSTRUMENT II)*



* It must be remember that the data above is based upon ratings of more hygienes than motivators and that the responses were extremely skewed toward satisfaction.

Results Regarding the Relationships of Demographic Data and Responses to Instrument II Items

Table 8 divides the significant chi square results according to Maslow's five need categories. (Related graphs are found in Appendix D.) For the lowest level need, security, as rated by "job security", the satisfaction and dissatisfaction responses were significantly differentiated on the bases of age, rank, and tenure for both methods of aggregating the frequencies. Faculty members who were 45 years of age or older, held tenure and who were of higher rank were significantly more satisfied than those younger, with no tenure and who were of lower rank.

The data for social needs show that there were no relationships between the demographic variables and the factors of "interpersonal relations with colleagues or subordinates". When comparing "very satisfied" frequencies with all other scores for "interpersonal relations with students" there were significant differences on the basis of rank and age. Older faculty with higher rank were more likely satisfied with their student interaction. Also, when aggregating the data according to "very satisfied" and all other responses, it was found that older faculty were more likely to be satisfied with their "opportunity to help others". And, when examining satisfied and dissatisfied responses according to tenure status it was learned that tenured faculty tended to be more satisfied with the "interpersonal skill of their supervisor" than those without tenure.

The responses for "recognition", an esteem need item, were found to have a relationship with reference to rank and tenure for both frequency counting approaches. Faculty members with higher rank and

Table 8. SIGNIFICANT CHI SQUARE VALUES FOR ITEMS RELATED TO RANK, TENURE AND AGE (SEPARATED BY MASLOW'S NEED CLASSIFICATIONS)+

NEED/ITEM	VARIABLE	CHI SQUARE	p
SECURITY NEEDS			
Job Security	Rank	30.22	.001
	Rank	12.01*	.01
	Tenure	21.72	.001
	Tenure	14.13*	.001
	Age	8.42*	.01
	Age	6.21	.05
SOCIAL NEEDS			
Opportunity to Help Others	Age	3.88*	.05
Interper.(students)	Rank	8.06*	.05
	Age	4.07*	.05
Interper.(superior)	Tenure	5.95	.05
Interper.(peers)	NOT SIGNIFICANT		
Interper.(subord.)	NOT SIGNIFICANT		
ESTEEM NEEDS			
Recognition	Rank	10.97	.01
	Rank	8.14*	.05
	Tenure	7.37*	.01
	Tenure	4.90	.05
Status/prestige	Rank	13.87	.01
	Tenure	14.14	.001
	Tenure	4.17*	.05
AUTONOMY NEEDS			
Autonomy	Rank	9.00	.05
SELF-ACTUALIZATION NEEDS			
Accomplishment	Rank	8.19	.05
	Tenure	9.46	.01
	Tenure	7.27*	.05
Achievement	Tenure	5.08*	.05
Growth	Rank	12.93*	.01
	Rank	12.55	.01
	Tenure	10.00*	.01
	Tenure	5.93	.05
	Age	10.22*	.01
	Age	4.61	.05

+ Chi square value required for significance for age and tenure variables with df=1 at the .05 level is 3.84; at the.01 level, 6.64; and at the .001, 10.83. The rank chi square significant value with df=2 at the .05 level is 5.99; at the.01 level, 9.21; and at the .001 level, 13.83.

* Indicates that frequencies were tallied by "very satisfied" ratings and by taking all other scores collectively. Results without the asterisk indicate that the chi square value was based upon the frequency for all satisfied ratings and all dissatisfied ratings.

tenure were more likely to be satisfied with the amount of recognition they receive. "Status and prestige", another esteem item, was found to receive differentiated responses for rank and tenure when the frequencies for "very satisfied" and all other ratings were examined. Tenure was also a significant demographic variable when using the alternate approach of aggregating data. The more satisfied faculty member with regard to status and prestige was more likely to have a higher rank and tenure.

Only one variable was found to significantly influence the ratings for "autonomy". Those with higher rank were more likely satisfied with their amount of autonomy than those with lower rank when employing satisfied and dissatisfied frequencies for the chi square calculations.

With reference to the self-actualization needs, the responses for the "sense of accomplishment" item were found to be related to the presence or absence of tenure, according to both chi square calculations, and differentiated according to rank when the chi square was based upon satisfied and dissatisfied responses. There was also a relationship between responses and tenure status for the "achievement" item when using the satisfied-dissatisfied frequencies. And finally, the "opportunity for growth" was differentiated by rank, tenure, and age when both frequency aggregating approaches were used. Those who were 45 years or older, who held tenure and had a higher rank tended to be more satisfied with their "opportunity for growth" in their teaching position.

In essence, the strongest relationships and the most frequent significant findings were primarily found for the lowest level need

of security ("job security"), the intermediate need of esteem ("recognition" and "status/prestige"), and the highest level need of self-actualization ("accomplishment", "achievement", and "growth"). Most of the above need-related factors were differentiated by rank and tenure. Age relationships were significant in the responses for "job security" and "growth" factors. Hypothesis III was supported only in part. The exceptions included: security needs were strongly differentiated on the basis of demographic data, autonomy needs were only slightly differentiated, and age did act as a variable with relationships to satisfaction and dissatisfaction responses.

Although not used in the need satisfaction investigation, it is interesting to note that the following Herzberg factors showed no response relationship to demographic data: "work itself", "responsibility", "salary", "policies and practices", "work conditions", and "supervision-technical". The factor of "personal life" as affected by the job was differentially rated according to all three demographic variables. Again, those 45 years or older, who had tenure and higher rank were more satisfied.

Discussion and Implications

The conflicting results found when using two different satisfaction instruments demands scrutiny to determine the possible causes for such differences.

The "work itself" was found to contribute 23.81% of the dissatisfaction for Instrument I coded items. It was the largest source of dissatisfaction. Yet, absolutely no dissatisfaction was indicated for the Instrument II "work itself" item. By examining the incidents

placed in the "work itself" category for the first instrument it is learned that 30% of these experiences related to committee work and 25% dealt with paper work or administrivia. It is possible that when the respondents were rating the "work itself" category they were using a more specific frame of reference than that used for coding. The respondents might have only considered their classroom experiences as opposed to the inclusion of peripheral roles as was done when coding that factor for Instrument I. This demonstrates Graen's (1966) concern of conflicting coder-respondent perceptions. If the respondents were actually to code their own incident statements they might have placed committee and paper work under the category of policies and practices. Then the "work itself" Instrument I responses would be more in line with those for Instrument II.

The faculty members' tendency to provide socially acceptable responses might also account for the differences in the "work itself" results for the two instruments. It may be acceptable to be dissatisfied with committee work and paper work but unacceptable to be dissatisfied with the "work itself", particularly after years of career preparation.

When further examining the data for differences produced by the two instruments it is recognized that with the Herzberg incident method the factors of "achievement" and "interpersonal relations with students", controlled at least in part by the respondents, received more dissatisfaction mentions than similar categories when rated. And oppositely, when rating the factors the respondents were more likely to attribute dissatisfaction to "work conditions", "abilities of the supervisor",

and "advancement", factors not as strongly under their control. Thus, Vroom's (1964) criticism that respondents will attribute satisfying experiences to themselves and dissatisfying incidents to factors outside themselves (i.e. respond defensively) appears to hold true more for the rating method than for the critical incidents method. Yet, before adopting this conclusion in total, it must be added that the coder's perception of the incidents may have sufficiently altered the categorization of responses and as a consequence changed the extent of apparent ego defensiveness.

Response differences between instruments may be due to a halo effect in the rated responses as Grigaliunas and Herzberg (1971) recognized. There was an overwhelming satisfaction with all factors when rated but the results of the alternate method showed that several factors produced more dissatisfaction than satisfaction. In illustration, the factor of "policies and practices" received no mention in good experiences and was the third largest contributer to dissatisfying experiences; yet, 69% of the respondents checked that they were satisfied with the factor. However, it could also be hypothesized that there was accurate reporting and no halo effect when rating responses. Instead, the faculty may have struggled to record dissatisfying situations in response to question two and thus stated items that were the least satisfying and not truly dissatisfying. This argument is supported by the fact that in some cases the respondents did not supply the three requested bad experiences but always offered three good experiences. It is unfortunate that response effect was not controlled in the rating method, it could easily cloud the evidence for a halo effect.

Interviewing the respondents would provide a better understanding of the conflicting instrument results. Regrettably, time constraints and the location of the respondents made this impossible.

The differences in data outcome of this study and Herzberg's findings require review. First, it cannot be easily overlooked when comparing the results that job context and content factors differ according to the population studied. Classifying "interpersonal relations with students" when questioning faculty as a hygiene factor as Herzberg did with interpersonal relations when studying accountants and engineers may be erroneous. Interpersonal relations for Herzberg's sample may very well have been outside the task itself or a context factor. But, for faculty, interpersonal relations with their students are an integral part of the work itself, and thus, require the job content or motivator classification. Of the student-related incidents coded, 77.91% were connected with satisfying experiences. And, when this factor was rated, 100% of the respondents were satisfied. Other faculty satisfaction researchers have also discovered that "interpersonal relations with students" acts more as a motivator than as a hygiene (Avakian, 1971; Cohen, 1974; Leon, 1973; Wozniak, 1973). To offer still more evidence that this factor should be classified as a motivator when sampling faculty satisfaction, Avakian (1971) notes that "achievement", "recognition" and "work itself" occur with high frequency in incidents also coded for "interpersonal relations with students", 64%, 50% and 32%, respectively.

The factor of "advancement" in this study (Instrument I) and in the studies of Avakian (1971) and Swierenga (1970) was found to contribute more to dissatisfaction than satisfaction. Again, could not

the reasons for it behaving as a motivator or as a hygiene be due to content and context characteristics, the differences in professional perspectives and the way advancements are made? Advancements in the fields of accounting and engineering may be made on the basis of one's ability to do the task, and therefore, it would be appropriately categorized as a motivator. In academe, advancement opportunities may not be perceived to be attached to teaching but instead related to context factors such as seniority or the "publish or perish" policies and practices.

Another contrast in results is that "responsibility" in this study (Instrument I) was found to be a hygiene and in Herzberg's study it was a strong motivator. Different coder perceptions could account for the variance. When comments were made about work overload in this study the coder saw it to be too much responsibility and recorded it in the "responsibility" category. Herzberg and other coders might have considered it to be related to "work itself" or perhaps "work conditions".

The reclassification of "interpersonal relations with students", "advancement", and "responsibility" would help the results conform to the expected motivator-satisfaction, hygiene-dissatisfaction relationships but other categorical problems are still unsolved. For example, the interaction between "advancement", now seen as a hygiene, and the motivators of "recognition" and "achievement" still is present. It seems to be the result of such contamination that the motivator and hygiene affects on satisfaction and dissatisfaction are not more differentiated. This author concurs with Evans' (1970) criticism of diffuse and interrelated factors and motivator-hygiene categories.

And finally, an interesting contrast exists when comparing the Herzberg "salary" factor outcomes with the results of this study. When the faculty salary responses are separated from those pertaining to departmental budget for Instrument I responses, only two responses or about 1% of the dissatisfied responses are attributed to salary. The Herzberg data indicate a total of 13% of the dissatisfied responses were salary related. In addition, his data show that 19% of the satisfied responses were associated with salary while again only two responses or less than 1% of the faculty satisfying incidents related to salary. In comparison with engineers and accountants, faculty appear to place less emphasis upon salary as a satisfier or dissatisfier. Other writers have tended to support the fact that salary is not the most important employment factor for faculty. Specifically, Blackburn and Aurand (1972) examined 18 empirical studies of mobility of academic men and concluded that money was important but clearly not first priority item. And, Wilson (1964) states in The Academic Man:

> In common with the clergy and certain other vocations, the academic profession stands somewhat apart in not having its general prestige established primarily in terms of monetary remuneration. There are other important common denominators of achievement and usefulness, so that money becomes important only when these are vague or weakened in significance. Success or distinction in university work is a good comparable with wealth and power in other occupations. (p. 228)

The examination of the need satisfaction data calls for a comparison with Porter's industrial findings and raises some fascinating questions.

The differential satisfaction experienced between hierarchical levels for industry are not identical to that found in the faculty

hierarchy. In higher education relationships were found between the demographic factors and the responses pertaining to security, the lowest level need. This was not evidenced in the industrial setting. Is it necessary to have less security satisfaction among the younger, non-tenured, and those of lower rank to ensure higher motivation and productivity? Or, if the administrator attempts to provide more satisfaction through rewards to the better performers, does this mean that those younger, without tenure, and of lower rank are poorer performers? Also, as Maslow contends, is need fulfillment on this level necessary before higher level needs become operative? If so, this may mean that job security is crucial before effective teaching and publishing can occur. Indeed, the faculty data demonstrate that those with lower rank, younger and without tenure also are less likely satisfied with the higher order needs.

Another difference between Porter's (1962) results and those of this study is that the relationships between autonomy responses and demographic data are decidedly less in the teaching profession in comparison to that found among industrial managers. As with the comparisons made against Herzberg's results, it seems that the differences in the job content and context account for the inconsistent findings. The hazzards of generalizing industrial findings to the field of education are obvious and prove the need to explore careers within the organization of higher education.

Why were older faculty with tenure and higher rank generally more satisfied with items related to security, esteem and self-actualization needs? There are several factors which may contribute to this finding. Inherent in receiving tenure or an advanced rank are the values of security and increased status and prestige. And, although

not directly examined in this study, it is likely that age is significantly correlated with the other two variables. The results may also occur because dissatisfied faculty leave the field before they reach a higher rank or gain tenure, or, because they have not received these rewards. Further, Wernimont (1966) believes the difference between satisfied and dissatisfied workers to be that those dissatisfied have not had their expectations met, as noted above, or have unrealistic expectations. Using this premise, it is conceivable that satisfaction may be increased and unrealistic expectations reduced if during the initial interview with potential faculty, areas associated with security, esteem and self-actualization factors are discussed as is done currently with salary and working condition factors.

Beyond this recommendation for increasing satisfaction among neophytes, the research has other implications for administrators.

It is implied in the results that administrators cannot assume that a continuous upgrade of salary will be the primary ingredient to increase satisfaction. It has been found that "opportunities for growth", a "sense of achievement", the "work itself", "recognition", and "interaction with students" are more powerful sources of satisfaction. Administrators can contribute to satisfaction by providing the kinds of rewards that reinforce the aspirations of faculty self-actualization. By providing job situations whereby faculty members are able to grow in their skills and talents, where they are able to successfully complete their work, and have much student interaction, administrators will be advancing satisfaction. This requires identifying the priority needs of each faculty member so that assignments and responsibilities may be delegated to satisfy their needs.

Nor, should the satisfaction of lower needs be neglected in an attempt to satisfy those of esteem and self-actualization. Alternative means for providing job security should be sought so that even the good performing young faculty without tenure or high rank can receive satisfaction in this area, in addition to having accurate expectations. Policies and practices, the interpersonal and technical skills of the department chairman, and the work overload, all strong dissatisfiers, should be examined.

Further, administrators should note that when attempting to learn which factors have the greatest potential for improving job satisfaction, asking faculty to state satisfying and dissatisfying experiences offers clear distinctions. The use of factor rating forms restrict the options to the administrator's frame of reference which may eliminate factors as was done in this study (time constraints, work overload, committee and administrative work). In addition, the rating form may not yield clear satisfying and dissatisfying distinctions due to a halo effect, response effect, or ego defense processes.

And finally, this investigation prompted questions unrelated to satisfaction: Why in such a relative young field are women faculty so under-represented, particularly when examining affirmative action implementation is frequently a curricular focus? Over 90% of the respondents were males. And, the second point to ponder: More than 20% of the 200 faculty members receiving the questionnaire returned it checking "not currently teaching". Does this speak to the teaching, research and publishing priorities of the institution, the profession, or of the individuals?

Summary

Two instrments were developed to study the job satisfaction of those teaching higher education. One instrument was a modification of Herzberg's critical incidents method; the other was a rating form based upon Herzberg's factors. The instruments were combined into one questionnaire and sent to 200 randomly selected faculty listed in the "November 1974 Directory of Faculty Members Teaching in the Field of Higher Education". The conclusions below are based upon the data gathered from 73 usable responses:

1. The satisfaction frequencies for Instrument I, Instrument II, and the global satisfaction scores showed the higher education faculty to be overwhelmingly satisfied with their teaching positions.
2. Results of the modified critical incidents questions demonstrated that different factors contribute to dissatisfaction and satisfaction. The hygiene factors of "policies and practices", "salary/budget", "supervision-technical", and the "time element" were strong contributers to dissatisfaction. The motivators of "achievement", "recognition" and "growth opportunities" were strongly associated with satisfying experiences. The hygiene of "interpersonal relations with students" and the motivators of "responsibility" and "advancement" acted unidimensionally but in the direction opposite to that predicted.
3. All factors contributed significantly more to satisfaction than dissatisfaction for Instrument II.

4. Hygiene factors, as a group, contributed more to dissatisfaction than motivator factors, as a group, when using both instruments. Also for both instruments, motivators, taken collectively, contributed proportionately more to satisfaction than the aggregated frequencies of hygiene factors.
5. For items related to security, esteem and self-actualization needs, there was a relationship between satisfaction responses and tenure status, rank, and to a lesser degree, age. Items related to the social and autonomy needs had fewer relationships with the demographic variables.

Generalizing from the results of this study should be done with extreme caution. The sample size, the fluctuating nature of satisfaction, differences in the behavior of context and content factors according to occupation, and varying value orientations of employees and coder perceptions limit the application of results to other populations.

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Appendix A

From: Burke, R. J. Are Herzberg's motivators and hygienes unidimensional? Journal of Applied Psychology, 1966, 50(4), 317-321.

SUMMARY OF INVESTIGATIONS ATTEMPTING TO REPLICATE OR EXTEND HERZBERG'S THEORY

Investigator	Subjects	Procedure	Findings
Friedlander (1963)	Engineers, supervisors, and salaried employees of a large manufacturing firm (200 of each)	Factor analysis of a 17-item questionnaire measuring the importance of various job characteristics to employee satisfaction	Three meaningful factors emerged. Two corresponded, in part, with motivators and hygienes, while the third seemed to draw from both motivators and hygienes.
Bucco (1963)	96 research and development personnel of varying specialities, educational levels, and organizational levels	Respondents rated the importance of the absence of 118 items to their desiring to leave their present position	Many of the most important items which if not present would cause the individual to seek other employment were similar to Herzberg's motivators.
Schwartz, Jamesaitis, & Stark (1963)	111 male supervisors employed by 21 public utility companies	Content analysis of written stories describing pleasant and unpleasant job experiences	Motivators were generally associated with pleasant experiences and hygienes with unpleasant experiences. One Herzberg motivator acted like a hygiene in this sample.
Dunn (1964)	1,021 full-time life in insurance agents divided into an experimental sample (541) and a cross-validation sample (480)	Factor analysis of a 58-item attitude scale completed by the experimental sample	Six interpretable factors emerged, of which three were hygienes and two motivators. Two of the three hygienes acted like motivators in both samples; the other hygiene acted like a motivator in the cross-validation sample, and like both a motivator and a hygiene in the experimental sample. One motivator acted both as a motivator and a hygiene.
Friedlander (1964)	80 students in an evening course in industrial or child psychology (part were full-time employees in various occupations and part were members of a cooperative work-study program)	Respondents rated the importance of 18 variables to job satisfaction and job dissatisfaction	The results indicated that motivators and hygienes are not opposite ends of a common set of dimensions. The majority of these job characteristics seemed to be significant contributors to both satisfaction and dissatisfaction on the job.
Friedlander & Walton (1964)	82 scientists and engineers in various specialities	Semistructured interviews in which respondents were asked for the most important factors keeping them in the organization and factors that might cause them to leave the organization	Reasons for remaining in an organization (primarily motivators) were different from, and not merely opposite to, the reason for which one might leave an organization (primarily hygienes).
Lodahl (1964)	50 male auto-assembly workers, and 29 female electronics-assembly workers	Factor analysis of data obtained from a content analysis of interviews	Two technological and three attitude factors emerged. The technological factors were different for the two samples, but the attitude factors corresponded rather well. Two of the three attitude factors resembled motivators and hygienes.
Myers (1964)	282 male scientists, engineers, manufacturing supervisors, and hourly technicians, and 52 female hourly assemblers	Content analysis of Herzberg-like interviews	Job characteristics grouped naturally into motivator-hygiene dichotomies. However one Herzberg motivator acted like a hygiene and other Herzberg motivators acted both as motivators and hygienes. Different job levels had different job characteristic configurations. The female configuration was different from the four male configurations, suggesting a sex factor. Common Herzberg motivators were absent from the hourly technician and hourly female assembler configurations suggesting a job-level factor.
Saleh (1964)	85 male employees at managerial levels in 12 companies	Herzberg-like interview, and a 16-item job-attitude scale (6 motivators and 10 hygienes) presented in a paired-comparison format	Preretirees looking backward in their careers indicated motivators as sources of satisfaction and hygienes as sources of dissatisfaction; preretiree looking at the time left before retirement indicated hygienes as sources of satisfaction.
Dunnette (1965)	114 store executives, 74 sales clerks, 43 secretaries, 128 engineers and research scientists, 44 salesmen, 91 army reserve personnel and employed adults enrolled in a supervision course	Factor analysis of Q sorts of two sets of 36 statements (equated for social desirability) for highly satisfying and highly dissatisfying job situations	Some Herzberg motivators were related to satisfying job situations but Herzberg hygienes were not related to dissatisfying job situations. One Herzberg motivator acted like a hygiene. There was also a positive relationship expected under Herzberg's theory. Thus the same factors were contributors to both satisfaction and dissatisfaction.
Friedlander (1965)	1,468 civil service workers from three status levels (Low, Middle, and High GS rankings) and two occupational levels (blue collar and white collar)	Factor analysis of a 14-item questionnaire measuring the importance of various job characteristics to satisfaction and dissatisfaction	White-collar workers derived greatest satisfaction from motivators while blue-collar workers derived greatest satisfaction from hygienes suggesting that subgroups may have different work-value systems.
Gordon (1965)	683 full-time agents of a large national, life insurance company	Respondents rated their degree of satisfaction and dissatisfaction with 54 items comprising 4 scales (motivators, hygienes, both, hygienes minus both). A measure of overall job satisfaction, self-reported production figures, and survival data were also available	Contrary to expectations, individuals highly satisfied with motivators did not have greater overall job satisfaction than individuals highly satisfied with hygienes; and individuals highly dissatisfied with hygienes were not less satisfied than individuals dissatisfied with motivators. A positive relationship was found between satisfaction with motivators and self-reported production, but no relationship between hygienes and production. This study offered no support to the theory that specific job factors affect attitudes in only one direction. Support is offered that primarily the motivators bring about superior performance.
Halpern (1965)	A [illegible] college graduates working in various occupations	Rating of satisfaction with 4 motivators, 4 hygienes, and overall job satisfaction on respondent's best-liked job	Although the respondents were equally satisfied with both the motivator and hygiene aspects of their jobs, the motivators contributed significantly more to overall job satisfaction than did the hygienes.
Vroom (1964)	50 accountants and 82 engineers	Self-description of past satisfying and dissatisfying job situations using both forced-choice and free-choice items	More motivators than hygienes were used to describe both job situations. Concludes that both motivators and hygienes can be sources of job satisfaction and job dissatisfaction.

Appendix A

From: House, R. J. & Wigdor, L. A. Herzberg's dual-factor theory of job satisfaction and motivation: a review of the evidence and a criticism. Personnel Psychology, 1967, 20(4), 369-389.

Summary of Investigations on Herzberg's Dual-Factor Theory

Researcher	Subject	Procedure	Findings
Burke (1966)	187 college students (male and female) enrolled in industrial psychology course	Ranking of 10 Herzberg's job characteristics—five hygiene and five motivator	Motivators and hygienes are neither unidimensional nor independent constructs.
Centers and Bugental (1966)	692 employed adults (male and female) engaged in a wide cross-section of occupations — manager, clerks and salesmen, skilled blue collar and unskilled blue collar	Ranking of most important attributes of job based on questionnaire composed of three intrinsic and three extrinsic items	Job motivations were related to occupational level. Intrinsic job components (motivators) were valued over extrinsic (hygienes) by white-color workers, while the opposite was true for blue-collar workers. Men and women were found not to differ in general. However, women placed a greater value on good coworkers, and a lower value on self-expression than men. Occupation is psychologically more central to men than women.
Dunnette, Campbell, and Hakel (1967)	133 store managers, 89 sales clerks, 44 secretaries, 129 engineers and research scientists, 49 salesmen, and 92 army reservists and night school students	Factor analysis of Q sorts of two sets of 36 statements for highly satisfactory and unsatisfactory job situations	Four job dimensions—achievement, responsibility, recognition, and supervisor human relations—were most important satisfiers and dissatisfiers. For some persons, satisfaction resides in the job content dimensions; for others, in the job context; and for still others, in combinations of both. The same holds for job dissatisfaction. Satisfying and dissatisfying job situations share many features in common, most of which are are common across a broad range of jobs.
Ewan (1966)	456 lower middle managers of which 89 "high" and "low" scorers were used	Self-descriptions by the Ghiselli techniques and job attitudes using Porter's MPQ technique were used to compare personality and job attitude (Porter, 1962)	Individual's evaluation of himself is primarily determined by his relative standing in reference group. At least two factors are strongly related to attitudes: the environment as indicated by the level of management, and personality as measured by self perception of psychological traits studied by Porter. The higher the level of management, the greater the need for autonomy and self-actualization.
Ewen (1964)	1,021 full-time life insurance agents divided into two groups—an experimental sample and a cross-validation sample	Factor analysis of 58-item attitude scale	Six interpretable factors emerged, of which three were hygienes, two motivators, and one general. Two of the three hygienes acted like motivators in both samples; one acted like a motivator in the cross-validation sample and both a motivator and hygiene in the experimental sample. Recognition, one of the two motivators, caused both satisfaction and dissatisfaction.
Ewen, Smith, Hulin, and Locke (1966)		Cited by Dunnette, Campbell, and Hakel (1965). Method not described	The intrinsic factors are more strongly related to overall satisfaction than the extrinsic factors. Extrinsic factors may depend on level of satisfaction with the intrinsic variable.
Fantz (1962)	Three hospital rehabilitation patients	Modified Maslow's six hierarchical needs to record major factor in six events described by the patients. Two satisfying events and dissatisfying events from hospital experience, and one each from previous job experience. Responses were analyzed in terms of the actual event and psychological effect.	"Good" events were described in terms of motivators, while "bad" events were described in terms of hygienes.

378 PERSONNEL PSYCHOLOGY
HOUSE AND WIGDOR 377

EXHIBIT 1—*Continued*

Researcher	Subject	Procedure	Findings
Friedlander (1963)	Engineers, supervisors, and salaried employees of a manufacturing firm (200 of each).	Factor analysis of a 17-item questionnaire measuring the importance of various job characteristics to employee satisfaction	Of the three factors which emerged, one was drawn from both motivators and hygienes.
Friedlander (1964)	80 evening students in a course in industrial or child psychology	Rating of 18 variables to job satisfaction and dissatisfaction	Intrinsic job characteristics were found to be important to both satisfaction and dissatisfaction, while extrinsic aspects were relatively unimportant. Satisfiers and dissatisfiers were held not to be opposite ends of a common set of dimensions.
Friedlander (1966b)	1,468 civil service workers from three status levels (low, middle, and high GS rankings) and two occupational levels (white and blue collar)	Factor analysis of a 14-item questionnaire measuring the importance of recreation, education, church, work content and work context factors	The work context factors (hygienes) were of primary importance to all status levels within the blue-collar group, plus the low-status level white collar. Only the medium- and high-status white-color workers placed primary importance on the work content factors (motivators). Suggests that subgroups may have different value systems.
Friedlander (1966a)	1,468 civil service workers from three status levels (low, medium, and high GS rank) and two occupational levels (white and blue collar)	Questionnaire responses as to importance of various job characteristics to satisfaction and dissatisfaction were related to age, tenure, and performance	Among white-collar workers, low performers were motivated primarily by the social environment of the job, and to a lesser extent by the opportunity for gaining recognition through advancement. Few significant relationships were between self-actualizing motivations and performance. Among blue-collar workers, no significant differences were noted between motivator and hygiene factor influence on performance. With advancing age and tenure, the importance of the social environment (hygiene) increased for both high and low blue-collar and white-collar performers. For blue-collar workers, both hygiene and motivator factors declined with age and tenure.
Friedlander and Walton (1964)	82 scientists and engineers	Semistructured interviews in which respondents gave the most important reasons keeping them in the organization and factors that might cause them to leave the organization	Reasons for remaining in an organization were different from, and not merely opposite to, the reasons for which one might leave the organization. Reasons for remaining were more closely related to satisfiers, while reasons for leaving were more related to dissatisfiers
Gibson (1961)	1,700 employees in four plants and ten departments of a Midwestern manufacturing firm	Questionnaire designed to elicit opinion concerning greatest satisfiers on job and the dissatisfiers *not already* covered in the questionnaire. Analyzed using Herzberg's 16 factors.	For male employees, results confirm theory, although only four factors reported. Women did not respond to negative question.
Gordon (1965)	683 life insurance agents	Rating of degree of satisfaction and dissatisfaction with 54 items comprising four scales (motivators, hygienes, both, hygiene minus both). Measures of overall job satisfaction and self-reported production figures were available.	Individuals highly satisfied with motivators did not have greater overall job satisfaction than individuals highly satisfied with hygienes, and individuals highly dissatisfied with hygienes were not less satisfied than with motivators. A positive relationship between satisfaction with motivators and production was found, but no relationship between hygiene and production.
Graen (1966)	153 engineers working in electronics firms	Factor analysis of 96-item questionnaire prepared from Herzberg definitions	Dimensions proposed by Herzberg, when represented as items and rated, do not result in homogeneous groupings in the factor-analytic or correlational sense.

EXHIBIT 1—*Continued*

Researcher	Subject	Procedure	Findings
Graglia and Hamlin (1964)	College students	Interposed tasks between before and after measures of motivation. Measured effects of intervening variables of effort at the task and relatedness of the task by determining willingness of students to participate in a series of future psychological experiments	The effect of succeeding at an effortful task was to increase the approach motivation of the subjects to participate in future activities while attempting to improve motivation by giving tasks a contextual relationship reversed the motivation to one of avoidance of future activities.
Hahn (1959)	800 officers in U.S. Air Force	Content analyses of questionnaire on relating satisfying and nonsatisfying experience	Major source of job satisfaction was self-actions. According to Herzberg, the category of self-action was similar to his achievement and responsibility categories. Major source of dissatisfaction was action of supervisors and job context, each of which did not contribute to job satisfaction.
Halpern (1966)	93 male college graduates working	Ratings of satisfaction with four motivators, four hygiene factors, and overall job satisfaction on respondent's best-liked job	Subjects were equally well satisfied with both the motivator and hygiene aspects of their jobs. The motivators contributed significantly more to overall satisfaction than did the hygienes.
Hamlin and Nemo (1962)	69 subjects divided equally in three groups—unimproved chronic schizophrenics, former patients, and students	20-item forced-choice activity questionnaire analyzed on choice-motivator scale	Positive mental health depends to a major degree on developing an orientation toward self-actualization, achievements, responsibility, and goal-directed effort. Improved schizos obtained higher motivator and lower hygiene scores than the unimproved. College students obtained higher motivator and lower hygiene scores than the two schizo groups.
Haywood and Dobbs (1964)	100 eleventh and twelfth grade students in public high school	Attitude toward tension-inducing situations was measured by the S-R Inventory of anxiousness. The choice-motivator scale of Hamlin and Nemo (1962) was used for classifying the subjects' motivational patterns	There was a significant tendency for subjects who were high in motivator orientation to be also high in approach motivation, while those high in hygiene orientation are also high in avoidance motivations.
Hinrichs and Mischkind (1967)	613 engineering technicians	Content analysis of open-end responses concerning factors influential in creating positive or negative attitudes with responses to overall satisfaction scale.	Content dimensions (motivators) were stated with equal frequency by subjects on every position on the overall satisfaction continuum. The proportion of content factors seen as contributing to negative job feelings became larger and larger with decreasing level of respondents' overall level of satisfaction.
Malinovsky and Barry (1965)	117 male maintenance men and watchmen at a Southern state university	Factor analysis (first and second order of 40-item work attitude questionnaire consisting of 20 motivator and 20 hygiene items)	Main dimensions of job satisfaction are not distributed along separate dimensions, but interact in a variety of ways. Of the 12 factors extracted from the first order-factor analysis, six were composed of both motivator and hygiene items. Overall satisfaction was related to both hygiene and motivator factors.
Myers (1964)	282 male scientists, engineers, manufacturing supervisors and technicians, and 52 female hourly assemblers	Content analysis of Herzberg-type interviews	Job characteristics grouped naturally into motivator-hygiene dichotomies. However, one Herzberg motivator acted like a hygiene and other Herzberg motivators acted like both motivators and hygienes. Different job levels had different job characteristic configurations. The female configuration was different from the four male configurations, suggesting a sex factor. Herzberg motivators were absent from the hourly technician and hourly female assembler configurations, suggesting a job-level factor.

EXHIBIT 1—*Continued*

Researcher	Subject	Procedure	Findings
Ott (1965)	350 telephone operators	Factor analysis of 115-item job attitude questionnaire	Five main factors were extracted. Two contributed mostly to satisfaction, both contained items primarily related to competent supervision; two contributed mostly to dissatisfaction, one dealing with supervision, the other with customers; one contributed to both satisfaction and dissatisfaction. Thus, sources of satisfaction were not independent. For workers of one cultural background, jobs characterized as varied, complex, and demanding were associated with high job satisfaction; for workers of a different cultural background, these same jobs tended to be associated with low job satisfaction in contrast to what one would expect from the dual-factor theory
Rosen (1963)	94 research and development personnel	Rating of importance of 118 items, as related to desire to leave present position	Many of the most important items which, if not present, would cause the individual to seek other employment were similar to Herzberg's motivators.
Saleh (1964)	85 managerial level male employees, ages ranged from 60 to 65	Semistructured interview and a 16-item job attitude scale	Pre-retirees looking backward on their careers indicated motivators as sources of satisfaction, and hygienes as sources of dissatisfaction; pre-retirees looking at time left prior to retirement indicated hygienes as sources of satisfaction.

Schwarz (1959)	373 third-level supervisors	Analyses of responses to questionnaire in part, asking questions similar to Herzberg in his critical-incident studies	Achievement and recognition for achievement were the factors occurring most in response to satisfying experience, while company policy and administration major cause of frustrating experience.
Singh and Baumgartel (1966)	340 nonsupervisory aviation mechanics	Questionnaire to determine demographic factors and importance of job factors on a 5-point Likert-type scale	Age and formal education are significant determinants of various job-related motivations. As a man gets older, the importance he attaches to getting ahead in the company job structure declines. The level of formal education achieved during youth induces a persevering effect upon his desire to get ahead.
Sandvold (1961)	Improved and unimproved schizophrenics and control group of nurses' aides	Used complex factoral design to measure the effects of effort and the effect of relating this effort to some purpose, in terms of before and after scores on the choice-motivator scale used by Hamlin and Nemo (1962)	Improvement in verbal responsibity as well as in motivator orientation for all groups who were given effortful tasks related to some purpose. Relating task to purpose was of most importance to the sick group, and of no importance to the normal group.
Wernimont (1966)	50 accountants and 82 engineers	Self-description of past satisfying and dissatisfying job situations, using both free-choice and forced-choice items developed to tap Herzberg's motivators and hygienes	Both groups of subjects endorsed more content (motivator) statements as describing both satisfying and dissatisfying types of situations. Both motivators and hygienes can be sources of job satisfaction and job dissatisfaction.
Yadov (1965)	2,665 workers under 30 employed in light and heavy industries in Leningrad	Analysis of attitude questionnaire	The most effective and important attitudinal factor for effective job performance is satisfaction with the kind of job.

Appendix B

Researcher: Avakian, N. A. (1971)

Subjects: 50 faculty in two liberal arts colleges (N=25) and two universities in northeastern New York (N=25).

Procedure: A personal interview using Herzberg's semi-structured questions. Chi square was used to check relationships.

Results: 1) The factors of achievement, recognition and work itself related significantly to job satisfaction. Possibilities of growth and responsibility showed a trend in the direction of satisfaction. 2) The factors of institutional policy and administration, supervision-technical, salary, and interpersonal relations with administration related significantly to job dissatisfaction. Interpersonal relations with colleagues and with subordinates indicated a trend in that direction. 3) Factors acting in the direction opposed to that predicted by the dual-factor theory included advancement, interpersonal relations with students, status and job security. 4) The factors of working conditions and personal life appeared with equal frequency in incidents associated with job satisfaction and dissatisfaction.

Researcher: Cohen, A. M. (1974)

Subjects: 222 community college instructors from 11 institutions. (57 instructors from a small college in southern California, 19 instructors from nine colleges in an eastern state, and 146 instructors from a larger college in northern California.)

Procedure: Herzberg's critical incident format (written not oral).

Results: Over two-thirds of the California faculty and more than half of the eastern faculty related satisfaction gained from working with students. One-third of the subjects suggested dissatisfaction was related to students, 15% noted difficulties with colleagues, and 20% noted organizational problems as sources of dissatisfaction.

Researcher: Edmundson, J. C. (1969)

Subjects: Faculty in the North Carolina Community College system.

Procedure: Multiple regression analysis of demographic items related to satisfaction and dissatisfaction.

Results: 1) Male instructors of at least 45 years of age or older, with most of their experience outside of formal educational jobs, seemed to be more satisfied in community college teaching. 2) Faculty employed in college transfer instruction appeared to be more satisfied than their peers in technical and vocational areas. 3) Analysis of satisfier items revealed little information as to which were associated with job satisfaction. 4) Work load, daily preparation required, committee work, no time for study, and inadequate salary were dissatisfier items associated with job dissatisfaction.

Researcher: Jamann, J. S. (1974)

Subjects: 495 nurse faculty of 30 colleges and universities.

Procedure: Respondents were asked to rate the importance of 18 variables to job satisfaction and dissatisfaction (Friedlander Job Attitude Rating Scale).

Results: Significant differences were found between sources of job satisfaction and dissatisfaction. The most important factors found to be associated with satisfaction were: work itself, achievement, use of best abilities, relations with co-workers, security, and challenging assignment. Achievement and use of best abilities were also identified as important in dissatisfaction along with work group, management policies, recognition, and growth.

Researcher: Leon, J. S. (1973)

Subjects: 250 professors from selected state colleges and universities in the states of Oklahoma, Kansas, Arkansas, and Missouri.

Procedure: One instrument asked the respondents to write their replies to Herzberg's critical incidents questions. Another instrument required the respondents to check three statements that best describe a past satisfying and dissatisfying experience. The list of statements was developed to parallel Herzberg's factors. Chi square was used to determine if the resulting factors were significant in differentiating between satisfaction and dissatisfaction.

Results: 1) With both instruments motivators as a group contributed significantly more to satisfaction than dissatisfaction. 2) Hygienes as a group contributed significantly more to dissatisfaction than to satisfaction. 3) Regarding indi-

vidual factors, motivators contributed more to satisfaction and hygienes contributed more to dissatisfaction. 4) The majority of the factors using the rating method acted as predicted by the two-factor theory with the exception of interpersonal relations with peers, interpersonal relations with students and status which were hygiene factors that acted as significant contributors to job jatisfaction.

Researcher: Morgan, T. D. (1974)

Subjects: 197 physical education and athletic personnel from selected small liberal arts colleges.

Procedure: Respondents were asked to record a satisfying and a dissatisfying sequence and to rate each of 16 factors as to their importance in each sequence. Chi square was used to determine the relationships between factors perceived to be important to job satisfaction-dissatisfaction and the variables of age, sex, highest degree held, tenure status, administrative position, and type of institution (church or non-church related).

Results: 1) Achievement, work itself and interpersonal relations-subordinates were rated as important in 90% or more of the satisfying sequences by the total group. 2) The three top ranking dissatisfying sequences were policy and administration, achievement, and personal life. 3) All 16 factors displayed multidimensionality, that is, they all were considered to be sources of both satisfaction and dissatisfaction 4) Rating differences were found between the following groups: male and female, master's and specialist-doctorate, tenure and non-tenure, division-department chairman and athletic directors-others, and church related and non-church related.

Researcher: Swierenga, L. G. (1970)

Subjects: 214 full-time college faculty members teaching at a large midwest university.

Procedure: Respondents were asked to indicate if any of 23 factors were present or absent during periods of satisfaction and dissatisfaction. Student's t-ratio for correlated samples and analysis of variance were used.

Results: 1) Certain motivator factors (achievement, recognition, work itself, responsibility and advancement) were mentioned significantly more in describing satisfying experiences than dissatisfying. 2) Conversely, the absence of certain

hygiene factors (work group, administration policies, technical supervision and relations with superior) were most mentioned while describing dissatisfying experiences. 3) The majority of the listed factors served as a greater source of satisfaction when present than as a source of dissatisfaction when absent. 4) The following was concluded: a) Satisfaction and dissatisfaction are not opposite ends of the same scale. b) There is a significant difference between factors as sources of satisfaction and as sources of dissatisfaction. c) If a factor contributes to a feeling of satisfaction, its absence will not necessarily contribute to a feeling of dissatisfaction. d) Some motivator factors and some hygiene factors contribute to job satisfaction as well as job dissatisfaction.

Researcher: Wozniak, L. C. (1973)

Subjects: 138 full-time music faculty in 64 two-year colleges.

Procedure: Respondents rated a measure of overall satisfaction (Satisfaction Index) and the importance of Herzberg's factors (Wickstrom Scale).

Results: 1) No intense dissatisfaction was evident. 2) Overall satisfaction was not significantly related to age, sex, level of education, music teaching experience, or place of employment of the subjects. 3) As measured by the Wickstrom Scale, the unidirectionality of factors hypothesized by Herzberg was supported: determinants of job satisfaction were qualitatively different from the sources of dissatisfaction. 4) Of the 10 Herzberg maintenance factors only four were high ranking sources of dissatisfaction. 5) Satisfaction and dissatisfaction was unrelated to demographic data. 6) The strongest sources of satisfaction were: achievement, work itself, recognition, responsibility, and interpersonal relations with students. 7) Prevalent sources of dissatisfaction were: policy and administration, effect of the job on personal life, working conditions, supervision, achievement, and recognition.

JOB SATISFACTION OF THOSE TEACHING HIGHER EDUCATION

(IF YOU ARE NOT CURRENTLY TEACHING IN THE FIELD OF HIGHER EDUCATION PLEASE CHECK (✓) BELOW AND RETURN THIS FORM IN THE ENVELOPE PROVIDED:

(of those returned) 21.0% Not teaching higher education)

N=42

In the questions below please respond regarding your attitudes toward your teaching responsibilities unless it has been indicated to do otherwise.

1. When you feel exceptionally good about your job, what aspects of the job come to mind?

   A_____

   B_____

   C_____

2. When you feel exceptionally bad about your job, what aspects of the job come to mind?

   A_____

   B_____

   C_____

After each of the following items, place a check (✓) in the appropriate column if you are VERY SATISFIED, QUITE SATISFIED, SOMEWHAT SATISFIED, NEITHER SATISFIED NOR DISSATISFIED, SOMEWHAT DISSATISFIED, QUITE DISSATISFIED, or VERY DISSATISFIED with that aspect of your teaching position:

N=73

	very satisfied	quite satisfied	somewhat satisfied	neither satisfied nor dissatisfied	somewhat dissatisfied	quite dissatisfied	very dissatisfied
3. Sense of achievement		95.77%			4.23%		
4. Amount of responsibility you have		97.14%			2.86%		
5. Kind of work		100.00%			0.00%		
6. Amount of recognition you receive		44.03%			5.97%		
7. Opportunity for advancement		79.19%			23.18%		

	very satisfied	quite satisfied	somewhat satisfied	neither satisfied nor dissatisfied	somewhat dissatisfied	quite dissatisfied	very dissatisfied
8. Technical ability of the administrator to whom you report		83.08%				16.92%	
9. Interpersonal skills of the administrator to whom you report		75.76%				24.24%	
10. Institutional policies and practices		65.25%				31.75%	
11. Work conditions		88.24%				11.76%	
12. Salary		90.14%				9.86%	
13. Personal life as effected by your work		84.38%				15.63%	
14. Degree of job security		89.86%				10.14%	
15. Opportunity to grow and develop in your job		90.28%				9.72%	
16. Amount of status/prestige you receive from your job		88.06%				11.94%	
17. Interpersonal relations with your colleagues		84.06%				15.94%	
18. Interpersonal relations with your students		100.00%				0.00%	
19. Interpersonal relations with those who report to you (clerical staff, graduate assistants, younger colleagues, etc.)		100.00%				0.00%	
20. Opportunities to help others in your job		95.71%				4.29%	
21. Amount of autonomy in your position		94.37%				5.63%	
22. Sense of accomplishment		94.20%				5.80%	
23. All in all, how satisfied are you with your present job?		95.71%				4.29%	

24. If you had your choice of all the jobs in the world, which would you choose? (check one)

60.94% Your present job 29.69% Another job in the same occupation 9.38% A job in another occupation

25. How likely is it that you will make a real effort to find a position at another institution within the next year? (check one)

67.14% Not at all likely 25.71% Somewhat likely 7.14% Very likely

26. Which gives you more satisfaction? (check one)

84.69% Your job 15.4% The things you do in your spare time

DEMOGRAPHIC AND INSTITUTIONAL INFORMATION N=73

1. Age at last birthday: $\bar{X}$=47 years

2. Sex: 90.4% Male N=66 9.6% Female N=7

3. Marital Status:

10.96% Single N=8 83.56% Married N=61

___ Widow/Widower 4.11% Divorced N=3

(1 did not respond appropriately)

4. Present rank:

53.4% Professor N=39 23.3% Assoc. Professor N=17

20.5% Asst. Professor N=15 1.35% Lecturer N=1

___ Instructor

1.35% Other N=1 (Executive Officer)
(Please write in)

5. Is your teaching appointment full time in the institution? 60.3% Yes N=44

38.4% No N=28 (specify percent ___ %)

(one did not have an official appointment)

6. What is your field of professional identification?

_____

7. What is the title of your department?

_____

8. The number in your department (beside yourself) also teaching Higher Education $\bar{X}$=6 (including self)

9. Total number in your department? $\bar{X}$=16

10. What degrees do you hold? (check all that apply)

___ BA/BS 5.5% MA/MS N=4 67.1% PhD N=49

2.0% EdD N=1 ___ Other (L.L.D) 1.3% N=1
(specify)

11. Previous academic work experience:

a. Number of years of teaching experience: $\bar{X}$=15

b. Number of years of teaching experience in your current department: $\bar{X}$=6

12. Number of courses you are teaching this term: (count different sections of same course as separate courses)

___ Undergraduate

___ Masters

___ Doctoral

13. Do you have tenure?

30.1% No N=22 68.5% Yes N=50 (1 did not respo

14. Are you represented by a collective bargaining unit?

(91.8%) No N=67 6.8% Yes N=5 (1 did not respo